



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,008	01/23/2007	Chul-Sik Yoon	123054-06005135	7180
23429 7590 08/26/2009 LOWE HAUPTMAN HAM & BERNER, LLP 1700 DIAGONAL ROAD SUITE 300 ALEXANDRIA, VA 22314				
EXAMINER				
JAMA, ISAAK R				
ART UNIT		PAPER NUMBER		
2617				
MAIL DATE		DELIVERY MODE		
08/26/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/565,008

Applicant(s)

YOON ET AL.

Examiner

ISAAK R. JAMA

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-20 is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 7, 9-11 and 13 is/are rejected.
- 7) ☒ Claim(s) 5, 8 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

The drawings were received on 05/20/2009. These drawings are acceptable and are entered accordingly.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

1. Claims 1 and 9 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 18 of copending Application No. 10/584,717. Although the conflicting claims are not identical, they are not patentably distinct from each other because the difference between claim 1 of 10/565,008 and claim 1 of 10/584,717 is that the word "mode" is added and the phrases "initial sleep window" and "final sleep window" is replaced by "minimum sleep

interval" and "maximum sleep interval" in the Application '008 application. Additionally, a "grouping database" is replaced by a "memory", a "sleep mode controller" is replaced by a "grouping controller", and the word "notifying" is replaced by the word "reporting". The one limitation that is absent from claim 1 of Application '008 is "a sleep mode database for storing the initial sleep windows and the final sleep windows of the grouped subscriber stations". In regard to minor differences in claims 9 and 18, the differences mentioned earlier apply. The additional difference between claim 9 and claim 18 is that claim 9 recites "sleep mode enter time" while claim 18 recites "entrance time to the sleep mode".

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

10/565,008	10/584,717
<p>1. A power saving mode control system of a base station in a wireless portable network system, comprising:</p> <ul style="list-style-type: none">• a message receiver for receiving a sleep mode request message from the subscriber station;• a message parser for parsing the sleep mode request message and extracting a minimum sleep interval, a maximum sleep interval, and a subscriber station identifier;• a grouping controller for determining a sleep mode entering time of the subscriber station which has requested the sleep mode based on the minimum sleep interval and the maximum sleep interval in	<p>1. A system for controlling a power saving mode of a subscriber station in a wireless portable Internet system, comprising:</p> <ul style="list-style-type: none">• a message receiver for receiving a sleep request (SLP-REQ) message from the subscriber station;• a message parser for parsing the sleep request message and extracting an initial sleep window, a final sleep window, and a subscriber station identifier;• a sleep mode controller for determining an entrance time to the sleep mode by the subscriber station which requests the sleep mode according to the initial sleep window, the final sleep window, and the

<p>order to group listening intervals of a plurality of subscriber stations and align them;</p> <ul style="list-style-type: none"> • a memory for storing sleep mode information on the grouped subscriber stations; and • a message transmitter for reporting the minimum sleep interval, the maximum sleep interval, and the sleep mode enter time to the subscriber station which has requested the sleep mode. 	<p>subscriber station identifier so as to group listening intervals of a plurality of subscriber stations and arrange the same;</p> <ul style="list-style-type: none"> • a grouping database for storing information on the sleep modes of the grouped subscriber stations and information on the groups; • a sleep mode database for storing the initial sleep windows and the final sleep windows of the grouped subscriber stations; and • a message transmitter for notifying the sleep-mode-requested subscriber station of the initial sleep windows, the final sleep windows, and the entrance time to the sleep mode.
<p>9. A power saving mode control method in a wireless portable network system, comprising:</p> <ul style="list-style-type: none"> • receiving a sleep mode request message from a subscriber station; • determining a minimum sleep interval and a maximum sleep interval of the subscriber station; • determining a sleep mode enter time based on the minimum sleep interval and the maximum sleep interval so that the listening interval of the subscriber station which has requested the sleep mode may be aligned and grouped with listening intervals of other subscriber stations; and • transmitting a sleep mode reply message including the minimum sleep interval, the maximum sleep interval, and the sleep mode enter time. 	<p>18. A method for controlling a power saving mode in a wireless portable Internet system, comprising:</p> <ul style="list-style-type: none"> • (a) receiving a sleep request message from a subscriber station; • (b) determining an initial sleep window and a final sleep window of the subscriber station; • (c) using the initial sleep window and the final sleep window and determining an entrance time to the sleep mode so as to arrange a listening interval of the sleep-mode-requested subscriber station and listening intervals of other subscriber stations and group the subscriber stations; and • (d) transmitting a sleep response message including the initial sleep window, the final sleep window, and a start frame to the subscriber station.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-15 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 6,463,307 (Larsson et al.) in view of U.S. Patent Number 6,765,893 (Bayley).

4. Regarding claims 1, 9 and 13, Larsson teaches a power saving mode control system of a base station in a wireless portable network system **[Abstract]**, comprising: a message receiver for receiving a sleep mode request message from the subscriber station **[Figure 5, Base station receiving a hibernation request]**; a grouping controller for determining a sleep mode entering time of the subscriber station which has requested the sleep mode based on the minimum sleep interval and the maximum sleep interval in order to group listening intervals of a plurality of subscriber stations and align them **[Column 2, lines 6-13]**; and a message transmitter for reporting the minimum sleep interval, the maximum sleep interval, and the sleep mode enter time to the subscriber station which has requested the sleep mode **[Column 3, lines 24-30; i.e. at the end of a time interval or time period specified by the BS, the hibernating mobile terminal listens for a paging message. During the time period the mobile terminal does not listen for paging messages. In other words, the BS specifies how often the hibernating mobile terminal will listen for paging messages]**. But

Larsson fails to teach a message parser for parsing the sleep mode request message as well as a memory for storing sleep mode information. Bayley teaches a method of and an apparatus for reducing the average power consumption in a remote unit in a wireless communication system **[Abstract]** whereby a message parser performs such functions as collection of bits in the message, computing and verifying any cyclic redundancy code (CRC) or other error checking code, translation of the message into an internal format, copying the transformed message into a buffer, and placement of the transformed message onto a queue for the proper protocol task. The message is evaluated field-by-field. In general, the processes of the decoder and the message parser are controlled by a controller **[Column 7, lines 41-52]** and a memory for storing sleep mode information **[Column 11, lines 34-39; i.e. if a reference pattern corresponding to either an empty general paging message or a message commanding the remote unit to sleep mode is stored in, for example, the memory 112 flow continues to block 136 where the received samples are compared with the stored reference pattern]**. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was to include the message parser of Bayley in the system of Larsson in order to minimize the amount of time required by the remote unit to parse a general paging message before determining if the remote unit is to enter the inactive state.

5. Regarding claims 2 and 3, Larsson further teaches that the power saving mode control system further comprises a traffic receiver for receiving traffic from a network; and a traffic transmission controller for buffering the traffic up to the listening interval of

a subscriber station which will receive the traffic, and transmitting the traffic [**Figure 5, i.e. base station buffer that buffers network received packets**]. In addition, Larsson also teaches that the base station [i.e. controller] calculates how often the terminal must check for paging [**Figure 6, see box**].

6. Regarding claim 4, Larsson teaches that the power saving mode control system of claim 3, wherein the grouping controller updates the maximum sleep interval to correspond to the traffic transmission interval by using the traffic transmission interval transmitted by the traffic transmission controller [**Figure 11; ILMI (interim local management interface) agent exchanges ILMI messages with the network while the mobile terminal is hibernating, and shows how the ILMI agent can obtain updated information for the MIB (management information base) from the mobile terminal**].

7. Regarding claims 6 and 11, Larsson teaches that the power saving mode control system wherein the grouping controller determines the length of the listening interval on the grouped subscriber stations, and the message transmitter reports the listening interval, and that the maximum sleep interval is determined based on the interval of periodic traffic [**Column 13, lines 33-36; i.e. keeping the first mobile terminal in the hibernation state when it is determined that no paging messages are present and the time period has expired, and restarting the time period**].

8. Regarding claim 7, Larsson teaches that the power saving mode control system of claim 6, wherein the listening interval is established within the sleep interval [**Figure 2, also see claim 4**].

9. Regarding claim 10, Larsson teaches that the minimum sleep interval is determined based on the minimum sleep interval requested by the subscriber station **[Column 2, lines 54-57; i.e. the terminal itself decides when and for how long it will sleep or hibernate (meaning a minimum or maximum sleep duration). The terminal can also determine the sleep duration based on the quality of service (QOS) of its established connections].**

Allowable Subject Matter

10. Claims 14-20 are allowed.

11. The prior art made of record and relied upon by the Examiner in the prosecution of this Application fails to teach or even suggest "a method for saving power of a subscriber station in a wireless portable network system, comprising: switching the mode of the subscriber station to a sleep mode for receiving no traffic; exponentially increasing a sleep interval during the sleep mode; maintaining the sleep interval during a predefined maximum sleep interval when the sleep interval reaches the predefined maximum sleep interval; aligning and grouping the listening intervals wherein the respective sleep intervals of a plurality of subscriber stations are terminated; and checking whether traffic indication is transmitted to the listening interval of the grouped subscriber stations during the sleep interval" as recited in independent claim 14.

12. Dependent claims 15-20 are also allowed for being dependent on an allowed base claim.

13. Claims 5, 8 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. Claims 5 and 12 recite "a power saving mode control system and method, wherein the sleep mode enter time is determined to be a time when the remainder obtained by dividing the frame number by the maximum sleep interval align window size managed by the system becomes the minimum sleep interval". Such a recitation is not taught or even suggested by the prior art made of record and relied upon by the Examiner.

15. Claim 8 recite "a power saving mode control system, wherein the sleep interval is exponentially increased from the minimum sleep interval to the maximum sleep interval". Such a recitation is not taught or even suggested by the prior art made of record and relied upon by the Examiner.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent Number 6,856,603 (Vollmer et al.) discloses a communications system in which several terminals or terminal devices are served by a central station or control center.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ISAAC R. JAMA whose telephone number is (571)270-5887. The examiner can normally be reached on 7:30 - 5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester G. Kincaid can be reached on (571) 272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/IRJ/

/Lester Kincaid/
Supervisory Patent Examiner, Art Unit 2617